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BETTER SURVIVAL OF VALGUS OPENING-WEDGE HIGH TIBIAL OSTEOTOMY: 10-YEAR RESULTS OF A RCT COMPARING CLOSING WEDGE AND OPENING WEDGE TECHNIQUE

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Background: Varus deformity increases the risk of progression of medial compartment knee osteoarthritis (OA). Patients with this condition can be treated with a valgus high tibial osteotomy (HTO) with a closing-wedge or opening-wedge technique. Little is known about the long-term results of closing-wedge versus opening-wedge osteotomy.
Purpose: The aim of this study was to investigate the clinical and radiological long-term results of closing-wedge and opening-wedge HTO.
Methods: Between January 2001 and March 2004, 92 patients were randomized to either a closing-wedge or opening-wedge HTO. The clinical outcome and radiological results were examined pre-operatively, at one year, six years, and, for the present study, at ten years post-operatively. Our outcomes included the endurance of achieved correction, progression of OA (Kellgren & Lawrence), severity of pain (visual analogue scale and Intermittent and Constant OsteoArthritis Pain score), knee function (Hospital for Special Surgery score, Knee Injury and Osteoarthritis Outcome Score), walking distance, complications and survival. We defined the non-survivors in our survival analysis as "patients converted to a total knee arthroplasty (TKA)" or as "patients in need for a TKA" according to the OARSI-criteria. The results were analyzed on basis of the intention to treat principle. The provisional ten year follow-up results are presented in this abstract.
Results: In the meantime 80 of the 92 patients are analysed 10 years post-operatively. Until March 2014 the remaining 12 patients will be invited to visit the outpatient clinic to ensure a minimal follow-up of 10 years. Twelve (39%) patients in the closing-wedge and six (18%) in the opening-wedge group were converted to a TKA after ten years ($p < 0.05$). Eighteen (58%) patients in the closing-wedge and 15 (44%) patients in the opening-wedge group were in need for a TKA after 10 years ($p = 0.26$). Ten years post-operatively, the hip-knee-ankle (HKA) angle was 0.1° (± 5.0° SD) of valgus after a closing-wedge HTO and 2.4° (± 6.9° SD) of valgus after an opening-wedge HTO ($p = 0.276$). In both groups the 10-year post operative HKA-angles did not differ from the one- and six-year post-operative angles. No difference in severity of pain or knee function was found between the two groups. Four (9%) complications occurred in the closing-wedge and 17 (37%) in the opening-wedge group.
Conclusions: Of the patients who had no conversion to a TKA, no difference in clinical outcome and radiological alignment was seen 10-years post-operatively between the closing-wedge and opening-wedge HTOs. In the present study, opening-wedge HTO was found to be associated with more complications. Closing-wedge HTO was associated with more conversions to a TKA, however no difference in number of patients in need for a TKA was found.

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HIP RESURFACING VERSUS TOTAL HIP ARTHROPLASTY IN PATIENTS WITH HIP OSTEOARTHRITIS: COMPARING STANDARDIZED OUTCOMES

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Purpose: The primary purpose of this systematic review was to compare studies of hip resurfacing (HR) to total hip arthroplasty (THA) in patients with hip osteoarthritis (OA) to determine rates of: 1) adverse events; 2) early revision or reoperation (within 5 years of surgery); and, 3) post-operative component misalignment, using a standardized outcome metric. HR has developed as being beneficial for younger, active patients, as an alternative to THA, but remains controversial. Study heterogeneity, inconsistent outcome definitions, and unstandardized outcome measures within the literature challenge our ability to compare outcomes studies for arthroplasty.
Methods: Studies were identified through electronic databases, grey literature and reference lists of included studies. Inclusion criteria were: English language studies published after 1996 reporting adverse events, complications, safety issues or revision rates, with respect to adults with primary hip OA, who underwent either primary HR or THA. Outcomes of interest included: revision, reoperation, dislocation, infection/sepsis, femoral neck fractures, time to revision, rate of early failure, mortality, and post-operative component alignment. Revision rates were compared to four national joint replacement registries. Results were reported per 1000 person-years for comparability and stratified by age, publication date and market status (in-use and discontinued).
Results: We identified 7,421 abstracts, screened and reviewed 384 full-text articles, and included 236. For all devices (those in-use and discontinued): dislocation rates were higher in THA than HR (5.7 vs. 2.2 per 1000 person-years, respectively); revision, reoperation, infection/sepsis, femoral neck fracture and early revision/reoperation rates were higher in HR than THA (10.8 vs. 6.7, 7.1 vs. 1.6, 2.3 vs. 2.2, 5.7 vs. 3.0, and 11.3 vs. 4.3 per 1000 person-years, respectively).
When discontinued devices were removed from the analyses (currently in-use devices only), dislocation rates remained higher in THA than HR. Revision, reoperation, femoral neck fracture and early revision/reoperation rates were higher in HR than THA (7.8 vs. 6.5, 7.4 vs. 4.4, 6.3 vs. 1.3, and 10.3 vs. 4.0 per 1000 person-years, respectively). However, infection/sepsis rates were higher in THA than HR (4.4 vs. 1.8 per 1000 person-years, respectively). The average time to revision was shorter for HR than THA for both market status groups.
Our revision findings were consistent with revision rates reported by three of four national joint replacement registries, albeit registry rates were lower than those reported in the literature.
Conclusions: The findings from this systematic review are intended to inform clinicians and health policy makers regarding the comparative risks of alternative joint replacement procedures for patients with OA, using standardized metrics. Results from the literature may be misleading without application of consistent definitions, standardized outcome metrics, and attention to device market-status. These are important considerations for clinicians when assessing and communicating patient risk. Standardized, comparative outcomes for HR and THA should be considered when selecting which device is most appropriate for individual patients.

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MID AND LONG TERM CLINICAL RESULTS OF DORSIFLEXION OSTEOTOMY OF THE FIRST METATARSAL BONE FOR HALLUX RIGIDUS

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Purpose: Artificial joint replacement or arthrodesis is usually performed to treat severe hallux rigidus. However, although pain can be relieved by these procedures, patients are unable to make toe-off motions, which causes problems of endurance and interferes with walking in some cases. We think that the main purposes of treatment of hallux rigidus should be pain relief and preservation of the MTP joint. In this report, we introduce the operative method of dorsiflexion osteotomy of the first metatarsal bone. We have performed this procedure since 2000 and obtained good mid- and long-term clinical results.
Methods: We studied 56 patients (58 toes; 31 toes in 30 male and 27 toes in 26 female) with hallux rigidus classified as Hattrup & Johnson Grade II to III. The age at surgery ranged from 51 to 80 years old, with a mean age of 71 years. A dorsal approach to the first MTP joint was used. Wedge osteotomy was performed at the metatarsal neck and the bone head was rotated dorsally to form an articular surface, which was fixed with a K-wire at the part of the osteotomy. Weight bearing was allowed from 3 weeks after the surgery. Patients were followed-up for 3 to 13 years with a mean follow-up period of 6 years and 3 months.
Results: Pain on walking and forced dorsiflexion disappeared in 55 toes and all of the patients could return to their normal daily lives with improved range of motion. None of the patients who underwent arthrodesis due to infection or in whom the arthrosis worsened complained of pain in the metatarsal region. No re-formation of bone spurs was observed on the X ray findings in any of the patients. Narrowing of the joint space was seen in nearly half of the patients on long-term follow-up, but none of the patients showed recurrent pain.